

**Efficacy of Coconut Shell Liquid Smoke Insecticides Against Whitefly
(*Bemisia tabaci*) on Edamame Soybean Plant**
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ABSTRACT

Whitefly (*Bemisia tabaci*) was one of the main pests on edamame soybeans which can cause a decrease in production of up to 80%. In this study, whitefly control was carried out using coconut shell liquid smoke. This research was conducted from July to October 2021 at the Plant Protection Laboratory and Bioscience Laboratory of the Jember State Polytechnic as well as the cultivated land in Dukuh Mencek Village, Sukorambi District, Jember Regency. The research was carried out in two stages, the first stage being a mortality test to determine the reference concentration used in the field. Laboratory tests used Completely Randomized Design (CRD) with 6 levels of treatment, namely concentrations of 0%, 5%, 10%, 15%, 20%, and 25%. The second stage of the study was a field test by comparing two treatments, namely the treatment of coconut shell liquid smoke with a concentration of 10% and the synthetic insecticide treatment with the active ingredient deltamethrin with a concentration of 2 ml/liter. Observation variables included population, attack intensity, number of pods, and weight of pods. The data were analyzed using the SPSS application by performing a normality test and a data homogeneity test. The conclusion in this research was that the effective concentration of coconut shell liquid smoke against whitefly pests is a concentration of 10%. The results of the analysis of observational variables consisting of whitefly pest population, attack intensity, number of pods, and weight of pods showed significantly different results between the treatment of coconut shell liquid smoke and the synthetic insecticide deltamethrin. Application of coconut shell liquid smoke has an effect on population and intensity of attack compared to deltamethrin treatment. The number of treatment pods of coconut shell liquid smoke was 28.58 and deltamethrin 26.68. The weight of the coconut shell liquid smoke treatment pods was 52.9 grams and deltamethrin was 48.8 grams.

Keywords : *Liquid Smoke, Whitefly, Edamame Soybean*